

REMARKS

In the instant Office Action dated January 8, 2008, the following rejections are noted: claims 2-9 stand provisionally rejected due to obviousness-type double patenting over claims 1-3 and 5 of co-pending Application No. 09/912,470; claims 4 and 6-9 stand rejected under 35 U.S.C. § 103(a) over the Murch reference (US Patent No. 5,764,190) in view of the Hall reference (U.S. Patent No. 4,587,524); and claims 2-3 and 5 stand rejected under 35 U.S.C. § 103(a) over the Murch reference in view of the Hall reference and further in view of the Engblom reference (U.S. Patent No. 6,002,367).

Applicant respectfully traverses each of the Section 103 rejections, which rely upon the combination of the '524 (Hall) reference with the '190 (Murch) reference because the alleged motivation is directed to a combination of the '524 reference with a "Ngheim" reference, where the Ngheim reference is not mentioned in the statements of rejection or otherwise identified. Applicant submits that this alleged motivation for modifying a Ngheim reference fails to establish any motivation for modifying the primary '190 (Murch) reference because it fails to mention the '190 reference. It is further unclear as to how the indicated motivation for maintaining "cardioids radiation characteristics" relates to the primary '190 reference. This Ngheim reference is also cited in the alleged motivation statement made on page 5 of the Office Action in connection with the combination of the '367 (Engblom) reference with the '190 reference. In this regard, there is no motivation for combining either the '524 or '367 references with the '190 reference.

Applicant also traverses all of the Section 103 rejections because the proposed combination of the '524 reference with the '190 reference does not teach or suggest all of the claim limitations, including those directed to a slotted ground conductor. As indicated at page 3 of the Office Action, the primary '190 reference does not teach a slot partially located underneath a conducting plate (*i.e.*, the '190 reference does not disclose the claimed ground conductor, which is coupled directly to an antenna feed, and having a slot therein as shown in FIG. 9). In an attempt to show correspondence to claim limitations including those directed to a slotted ground conductor, the Office Action cites slotted ground plane 12 as shown in FIG. 3 of the '524 reference. However, this slotted plane 12 is not a ground connector coupled directly to an antenna feed and thus fails to teach the claimed invention (*e.g.*, as in claim 9). For example, referring to FIG. 3 in the

‘524 reference, a monopole 22 is connected to a strip line 20, which is separate from the slotted plane 12. In this regard, the slot in the ‘524 reference is not located in a ground conductor to which an antenna feed is directly coupled, as the plane 12 is separate from and extending above the strip line 20. Therefore, the proposed combination of references fails to disclose limitations directed to a slot “provided in the ground conductor” where an “antenna feed is coupled directly to the ground conductor” (independent claim 9).

In view of the above, the cited references accordingly fail to provide teaching or suggestion of all of the limitations claims 2-8, which depend from claim 9. Applicant further submits that the cited references fail to disclose all of the dependent claim limitations as well. For example, referring to claim 4, the cited “further slot” in the ‘524 reference is located in a ground plane 14 that is separate from the ground plane 12 in which the above-discussed slot 18 is present. Therefore, the slots in the ‘524 reference are in separate planes and do not teach two slots (a slot and a further slot) provided in a common ground conductor as in claim 4.

Applicant further traverses all of the Section 103 rejections because the proposed combination of the ‘524 reference with the ‘190 reference is unmotivated because it would apparently either replace or undermine the purpose of the ‘190 reference or render the reference inoperable for its intended purpose. Specifically, the rejection is unclear as to whether the proposed combination is to replace the impedance-matching plate 10 in the ‘190 reference with the slot structure of the ‘524 reference, or to add the slot structure to the ‘190 reference. In either event (with each addressed in further detail below), there is no motivation for modifying the primary ‘190 reference and, therefore, a *prima facie* case of obviousness has not been established.

As indicated in its Abstract, the ‘190 reference achieves its purpose of reduced antenna dimensions using an impedance-matching conductor plate. For example, as indicated at column 3:30-48, a third conductor plate 9 operates in conjunction with a conductor plate 6 to serve as a capacitive load. A fourth conductor plate 10 is used to address “impedance matching and bandwidth” difficulties (column 3:35-38). This is in accordance with the ‘190 reference’s purpose as directed to a capacitive feed that maintains “good bandwidth and impedance matching in spite of the presence of a capacitive load” (*see* Abstract). Replacing the conductor plate 10 with an underlying slot

would thus undermine this purpose of the '190 reference because the impedance-matching plate 10 would no longer be used. In this regard, there is no motivation to modify the primary '190 as asserted because it would defeat its intended purpose, and further because the '190 reference already achieves impedance matching (thus, one of skill in the art would not look to address a problem that does not exist).

Alternatively, adding the '524 reference's slot to the plate 6 would apparently modify the impedance of the '190 reference and thus render the reference unsatisfactory for its purpose. That is, while the Office Action has not indicated how such a combination would be made or how the intended impedance-matching in the '190 reference could be achieved using such a combination, it would appear that the impedance characteristics of the '524 reference's slot would further adjust the already-tuned impedance in the '190 reference's antenna. As the nature of this impedance is important to the operation of the '190 reference's antenna, it is unclear as to how the antenna could function (and, in fact, appears that it would not). As is consistent with M.P.E.P. § 2143.01 and relevant case law (*see, e.g., In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)), a Section 103 rejection cannot be maintained when the asserted modification renders the primary '190 reference unsatisfactory for its intended purpose.

Applicant further traverses the Section 103 rejections of all of the claims because the alleged evidence of motivation is unrelated to the proposed combination of references as asserted to arrive at the claimed invention. Specifically, the Office Action cites to column 2:37-45 of the '524 reference as motivation for maintaining "impedance and cardioids radiation characteristics over a wide bandwidth." The '524 reference achieves this "by offsetting the stripline toward the slotted ground plane, and capacitively loading the slot" (*see* column 2:40-42). Referring to the above discussion and FIG. 3 of the '524 reference, this alleged motivation is thus for separating a stripline 20, to which a monopole 22 is coupled, from a slotted ground plane 12. Applicant submits that this alleged motivation would appear to teach away from exactly what the Office Action is attempting to show correspondence to (that is, a slot in a ground conductor to which an antenna feed is directly coupled). In this regard, one of skill in the art would not be motivated to couple an antenna feed directly to a slotted ground conductor in view of the

'524 reference's approach using a slotted plane that is offset from any antenna-coupled conductor.

Applicant further traverses the Section 103 rejection of claims 2, 3 and 5 because the statement of rejection relies upon a combination of the '524 reference with the '190 reference "as applied to claim 1," yet claim 1 is not pending in the instant application and no such application has been made.

Applicant respectfully traverses the provisional obviousness-type double patenting rejection of claims 2-9 over claims 1-3 and 5 of co-pending Application No. 09/912,470. To maintain an obviousness-type double patenting rejection, the Office Action must largely comply with the same standards as those applicable to a Section 103 rejection. In this instance, the double-patenting rejection is improper because the claims of co-pending Application No. 09/912,470 do not appear to mention a ground conductor having a slot that is partially located underneath a conducting plate, or a ground conductor that serves as a primary radiator (*see, e.g.*, independent claim 9 of the instant application). In addition, the claims of co-pending Application No. 09/912,470 do not appear mention that a slot is folded (*see, e.g.*, claim 3), a further slot (*see, e.g.*, claim 4) or other various aspects of the slot and otherwise. Accordingly, the provisional obviousness-type double patenting rejection of claims 2-9 is improper and Applicant requests that it be withdrawn.

Applicant has added new claims 10-21. Applicant submits that these claims are allowable over the cited references for the reasons stated above, and further because the cited references fail to teach or suggest limitations including those directed to a selectively resonant slot in a ground conductor or to an additional slot in a ground connector. The cited references also do not appear to show the excitation of transmission modes or shunt inductance via such slots. Support for these limitations may be found, for example, at paragraphs 0036-0046.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063.

Please direct all correspondence to:

Corporate Patent Counsel
NXP Intellectual Property & Standards
1109 McKay Drive; Mail Stop SJ41
San Jose, CA 95131

CUSTOMER NO. 65913

By: 

Name: Robert J. Crawford

Reg. No.: 32,122
(NXPS.454PA)